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UNITED STATES  
ATOMIC ENERGY COMMISSION  
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AN INTEGRATION RADIATION METER FOR BETA AND GAMMA RAYS,  
SIGMION, MARK 10, MODEL 70

Argonne National Laboratory

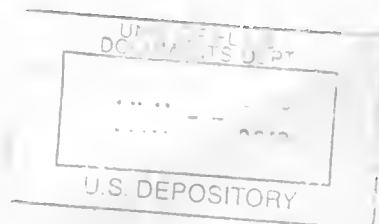
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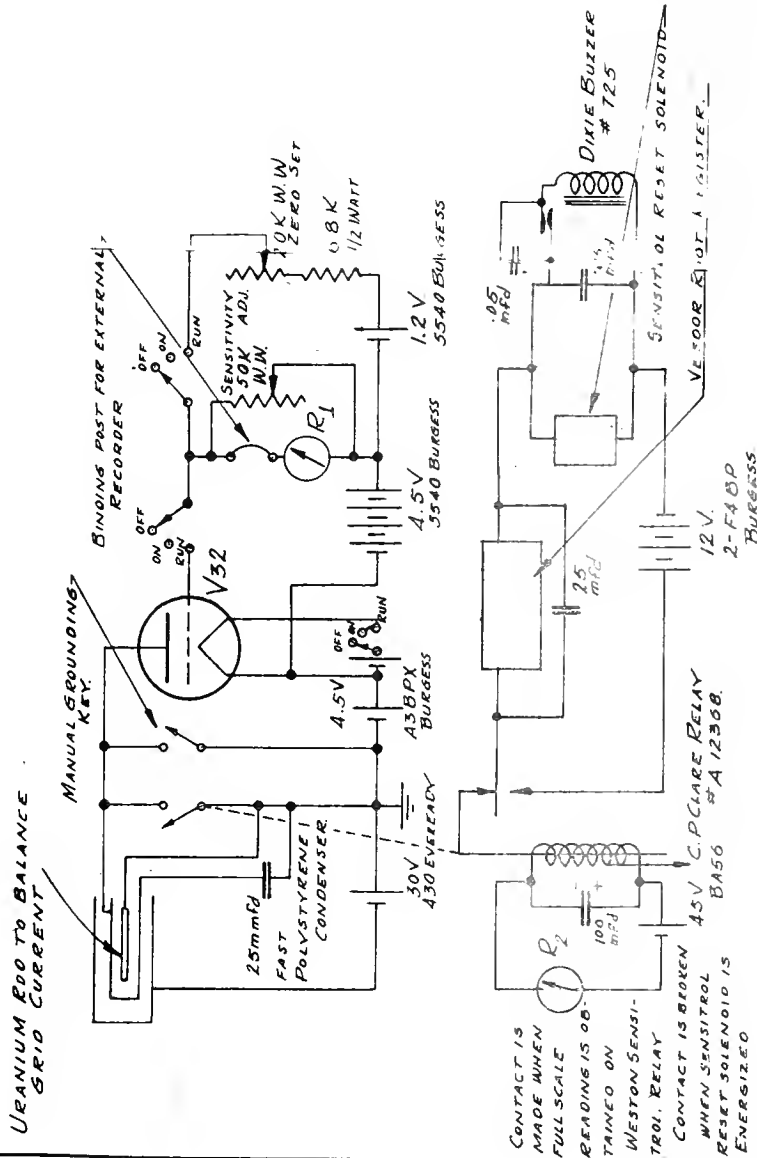
AN INTEGRATION RADIATION METER FOR BETA AND GAMMA RAYS,  
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The instrument consists of a 50 cc ionization chamber and an electronic circuit which is so constructed that when the total amount of gamma radiation falling on the chamber reaches any selected value up to 20 mr, an alarm rings, the circuit is reset, and is again ready to operate.

Each time the circuit is reset a message register is operated so that the total amount of radiation falling on the ionization chamber in any length of time can be measured.

The circuit as shown in the diagram uses a Victoreen V32 tube in an inverted manner so that the normal plate is the control grid and the normal grid is the plate. When used in this manner the effective grid currents are of the order of  $10^{-14}$  amperes and do not vary appreciably with effective grid potential. These grid currents are balanced out by an adjustable uranium rod suitably placed in the ionization chamber.

The instrument is self-contained with a battery life for continuous use of approximately 3 months. A cap is provided which may be placed over the ionization chamber to exclude beta particles from entering it. This instrument has been found very useful for determining the integrated amount of radiation present in any locality. Weight about 15 lbs.



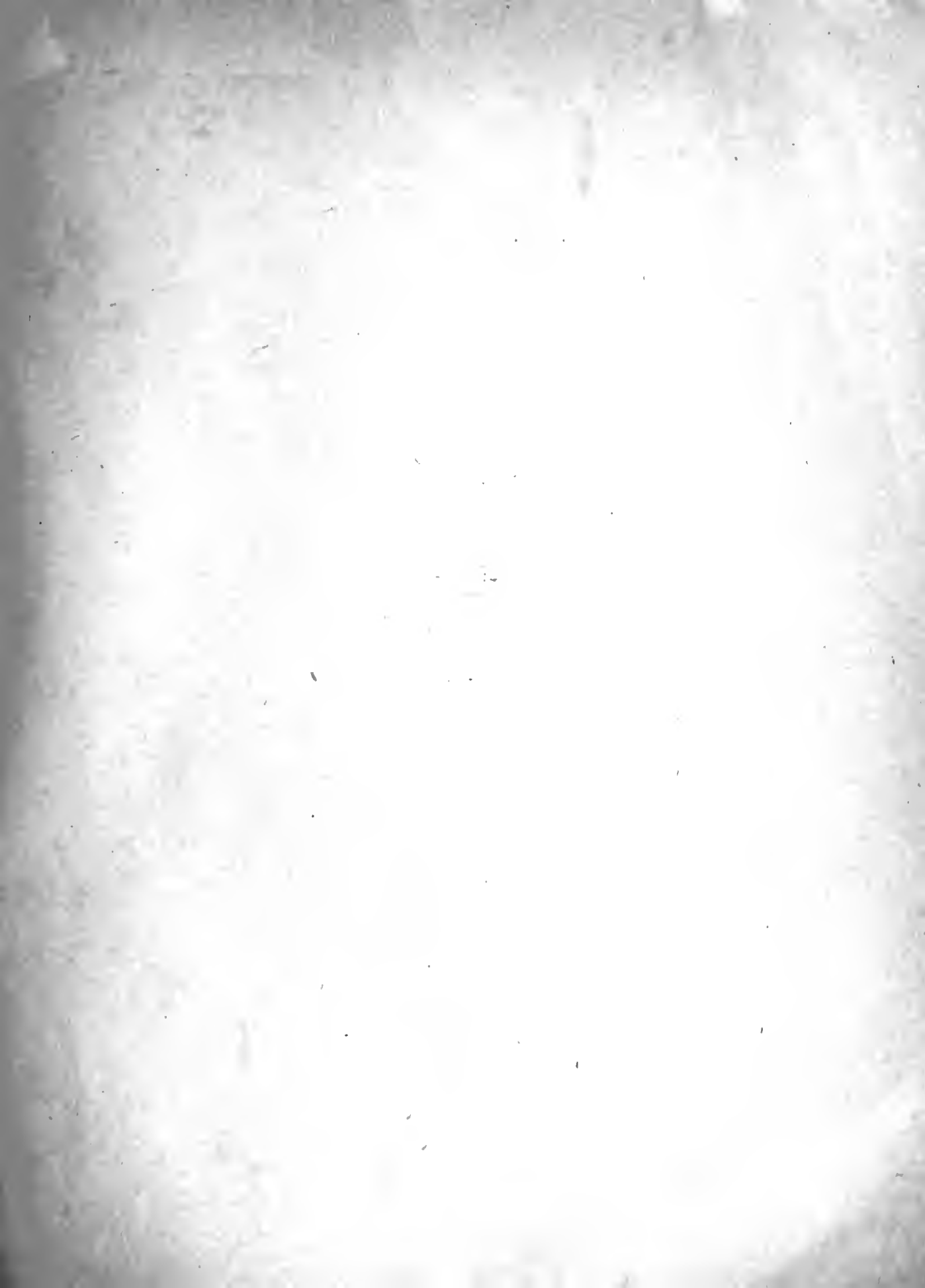
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S'OMION  
MARK 10 MOR 70  
DRWG NO PM 10787  
SHEET NO 1 OF 1  
SCALE NONE

INSTRUMENT SECTION  
METALLURGICAL LABORATORY UNIVERSITY OF CHICAGO

DES BY	REVISED	DATE
DG BY C. SPRLN65		
DATE 7-17-46		
APP BY		

### Figure 1



UNIVERSITY OF FLORIDA



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